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ABSTRACT

Following a review of research endeavors in the area of teacher evaluation and performance assessment, some procedures which have been developed at the University of Toledo (Ohio) to discriminate between competent and incompetent teachers are described. The university's program is competency-based, and researchers have identified 49 competencies student teachers are expected to demonstrate. Two instruments have been used in conducting research on these competencies. The low-inference instrument used is the Classroom Observations Keyed for Effectiveness Research (COKER); the high-inference instrument is the Teacher Performance Assessment Instrument (TPAI). The scoring procedures used with these instruments differ considerably, but the general results produced provide indications of how individuals, as well as groups, score on each competency measured. Results obtained from the instruments are usually provided in profiles of scores which can be generated for groups or individuals. The University of Toledo, through its project staff and faculty, has the capability of providing services to other institutions interested in the measurement of teacher performance. (JD)

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The Competency Assessment of Teachers Using High and Low Inference Measurement Procedures--A Review of Past Research and Promising Present Practices

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The development and use of high and low inference observation of teacher behavior in the classroom as well as other procedures to measure teacher competence, performance and effectiveness continues to be a major concern of teacher educators, other educational professionals, and the public. Teacher educators have long professed concern about the measurement/evaluation problem involved in looking at teacher competence and performance, but their declarations, for the most part, have been greatly influenced by the assumption that an individual experiencing and completing a program of teacher education would be able to handle children in the classroom with some degree of professional and academic success. There has never been much of anything developed in the way of evidence to support this belief, and what has been taken for granted about successful teacher behavior and resultant pupil outcomes can no longer be accepted on face value. There is no doubt that the problem of assessing the competency of an individual teacher has been neglected, and the matter reflects not so much an absence of means to develop valid procedures for assessing teacher competence, but failure to use them.

Teacher training institutions not only have the function of training teachers but also a gate-keeping function to perform which requires that they should graduate only those students who demonstrate teaching competence. Consequently, better assessment procedures which are more valid, objective and practicable, than what has been used in the past, are presently necessary.

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The purpose of this paper is to briefly introduce some procedures which can be developed and used, with institutional resources and efforts, to discriminate between competent and incompetent individuals preparing to be teachers or teachers inservice.

There is a long history of research concern on this subject beginning with the Commonwealth Teacher-Training Study published in 1929 by The University of Chicago and ending with present research efforts to look at teacher competence and performance. The early research on teacher effectiveness was not particularly useful and generally lead to inconclusive results. Teacher effectiveness was first perceived as a consequence of characteristics or personality traits of teachers and attempts were made to identify those characteristics. The most famous study with this approach was that of Ryan's Characteristics of Teachers published by the American Council on Education in 1960. This study, which was widely reviewed and quoted, indicated patterns of teacher behavior, attitudes and qualities which characterized elementary and secondary teachers. There was no evidence in the study to show that teachers possessing particular characteristics were actually more or less effective in helping pupils achieve various educational goals. Another research direction which has proven to be misleading has been efforts involving the methods of teaching. Results of such research have been inconclusive or contradictory, as most such efforts were focused on the mean gains in test performance of classes taught by different teachers using different methods rather than an analysis of the observed activities of the teacher. Further, work was not done to determine the consistency of class results by different teachers using the same method.

Most recently, teacher effectiveness research has been involved with teacher competencies and the mastery of them. This research direction emerged in the middle 1960's and focused on both teacher behavior and pupil learning--an effort which became known as process-product research. Research literature in the 1970's and 80's is full of such research findings in such volumes as that of Gage's Handbook of Research on Teaching; Borich and Fenton's The Appraisal of Teaching: Concepts and Process; Gage's The Scientific Basis of the Art of Teaching; Medley's Teacher Competence and Teacher Effectiveness; Smith's A Design for a School of Pedagogy; and Peterson and Walberg's Research on Teaching. These sources and others chronicle hundreds of studies done on the general question of "How does the behavior of effective teachers differ from that of ineffective teachers?"

The reviews by Medley suggest that an effective teacher's classroom tends to be orderly, psychologically supportive and maintained with a minimum of teacher effort. Effective teachers use more praise, reinforcement and encouragement than do ineffective teachers. Effective teachers are better classroom managers, less permissive, more supportive and maintain a learning environment freer from disruptive pupil behavior. The use of pupil time (time-on-task) is an important factor in teacher effectiveness. Effective teachers' classrooms utilize more large-group activity, devote more time to academic concerns and have less independent seat work. However, what seat work is engaged in receives closer supervision then that which occurs in an ineffective teacher's situation. Effective teachers ask more low-level questions, initiate fewer questions from pupils and do not tend to expand greatly on what pupils say. There is evidently a marked difference in how successful teachers behave in higher and lower socioeconomic status groups of pupils. What turns out to be effective teacher behavior with one SES group proves ineffective with the

other. These research results may appear surprising because they tend to challenge long-held assumptions and beliefs about effective teaching.

Other researchers have indicated that there is no single effective instructional method or individual teacher behavior. Teaching is a complex act and must be examined as constellations of behavior and as behavior occurring in a large context. Further, effective teacher behavior varies according to the subject being taught and pupil characteristics such as age and socioeconomic status. Individual teachers do make a difference. Differences among teachers are substantial, and relatively effective and ineffective teachers can be identified for study. When teachers adjust the cognitive demands of their lessons to the level of students' capabilities, student achievement increases. Teachers who make use of probing techniques and instruction will find that students make more inferences and more accurate inferences concerning subject matter. Research supports that direct instruction requires the setting and articulating of learning goals, the active assessing of student progress and frequent class presentations illustrating how to do the assigned work. Classroom climate and effective teaching behaviors are important in teaching. Teacher expectations of students apparently influence teacher behavior and student achievement. These are only a few, not all of the many interesting findings on teacher behavior and resulting effectiveness that can be provided in this brief session. A more complete account of such research can be obtained from the sources indicated and from Chapter 2 of the monograph, Measurement of Teacher Competence, developed by Dr. William Wiersma and myself.

More importantly, what does all of this mean in terms of a specific plan of action or procedure which can be organized in any teacher education institution for the evaluation and measurement of teacher competency, specifically

student teacher competency. A research team at The University of Toledo has been engaged for the past five years in conducting research on teacher effectiveness in connection with its competency based teacher education program. Our efforts have been an attempt to measure classroom teacher (meaning student teacher) performance.

We have identified 49 competencies which underlie our teacher education program which we expect our student teachers to demonstrate. The competencies in the program were isolated through a process of course/module content analysis, and it was found that the 49 competencies produced through this process corresponded and were consistent with a separate list of generic competencies identified for the State of Ohio's Standards for Colleges or Universities Preparing Teachers.

The procedure for assessing the identified competencies involved low inference and high inference classrcom observation of student teachers. Both observation systems were used since there are convincing arguments for both approaches with the advantages of one often viewed as the disadvantages of the other. Both approaches have their merits and weaknesses. Low inference observation has an advantage in its objectivity and the fact that it is generally more straightforward than high inference observation. It involves the recording of the occurrence of specific teacher behaviors which are defined with sufficient precision so that classroom observers will agree on whether the behaviors have occurred or have not occurred. There is no qualitative judgment involved on the part of the observer. In order for a behavior to be recorded it must be demonstrated in the instructional context. High inference observation, on the other hand, makes substantial inferences as to what teacher behaviors are being demonstrated and the quality of the demonstration. Observers using high inference instruments work from a set of indicators and descriptors for their competencies

(or whatever is being observed), and made judgments on particular aspects of teacher performance. This judgment is usually recorded on a scale of 1 to 5 with 1 being low and 5 high.

In the research we have been conducting, the low inference instrument utilized is the Classroom Observations Keyed for Effectiveness Research (COKER). The high inference instrument is that utilized by the State Department of Education in Georgia titled Teacher Performance Assessment Instrument (TPAI). Our 49 teacher behaviors (competencies) have been mapped into the competencies measured by the instruments. Of the 49 competencies established for this University of Toledo's CBTE program, 45 are measured by the TPAI and 22 by the COKER. Eighteen of the 49 competencies are measured by both instruments. The scoring procedures used with both instruments differ considerably, but the general results produced provide indications of how individuals, as well as groups, score on each competency measured. The results obtained from the instruments are usually provided in profiles of scores which can be generated for groups or individuals.

The results obtained through our research indicate that the two measurement procedures provide viable approaches to measuring the underlying competencies intended from The University of Toledo teacher education program. Generally, The University of Toledo student teachers demonstrate the competencies intended from the program. It has been found that some program components, such as those involved in the evaluation and individualization of teaching, need further attention when the scores of the student teachers are analyzed. On the other hand, most of the skills involved in successful instruction and intended by the program are demonstrated by the student teachers. There is evidence that in this type of competency measurement there is some instrument dependence. That is, a score on a given competency depends to some extent on the instrument used to

measure the competency. This is mainly due to the different procedures involved with high-inference and low-inference observation. It must be remembered that TPAI (high-inference) scores are scaled and have qualitative meaning while COKER (low-inference) scores are not scaled and have no qualitative meaning. Their meaning is quantitative only and represent the occurrence or lack of occurrence of specific teacher behaviors. There is no doubt that measurement through these types of observation, while demanding, is certainly feasible and useful in terms of the results obtained. The performance of individuals on important skills of teaching can be revealed. The use of such information is valuable in individual diagnosis, diagnosis and assessment and for general program evaluation. Objective information can be provided about what is happening in the classroom of a school or a school system. From such information in-service and staff development program can be devised and conducted. This type of in-service education is rarely implemented at the school level.

The full account of what has occurred in the past five years of research at The University of Toledo is found in the monograph titled Measurement of Teacher Competence, which was distributed to conference participants. What has occurred at The University of Toledo can be organized and developed, systematically, in any teacher education institution.

The University of Toledo, through its project staff and faculty, has the capability of providing the following services to other institutions interested in the measurement of teacher performance. The goal of these services is to have the user become self-sufficient in using the measurement/evaluation program. Specifically, the services offered are:

1. Identification of teacher competencies; for example, those which underlie a teacher education program; those desired from an inservice, staff development program; those judged to be important for a defined group of teachers.

2. Keying identified competencies into high-inference and low-inference observation instruments, so that competency scores may be obtained.

3. Training of classroom observers to use the high-inference and low-inference observation instruments; training for high-inference observation requires approximately 3 days, that for low-inference observation 6-10 days.

4. Computer scoring of observation data.

5. Analysis and interpretation of results, including group means, medians and standard deviations, group profiles for various teaching areas (primary, intermediate, secondary, special education, etc.) and individual profiles compared to group profiles.

6. Computer programs for scoring observation data can be made available along with programs for providing group and individual profiles through computer graphics.

The intent of offering the above services is to assist other institutions and school systems in implementing an evaluation program and for those institutions to become self-sufficient in such implementation.

We are convinced by our research efforts that measurement of teacher behavior, competence, effectiveness (whatever) is quite feasible and possible. Observation of teacher behavior with high and low-inference instruments is a reality and useful. It has considerable potential for the improvement of teacher education and teaching.

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